



### **Influenza vaccination among adults and children during the 2004-05 influenza season: Behavioral Risk Factor Surveillance System (BRFSS) Summary for data collected January 2-22, 2005**

This report provides an update of 2004-05 influenza vaccination coverage based on results from the Behavioral Risk Factor Surveillance System (BRFSS) survey. Information from this report includes persons interviewed during January 2-22, 2005 and updates information that was reported in the December 17, 2004 MMWR ([www.cdc.gov/mmwr/pdf/wk/mm5349.pdf](http://www.cdc.gov/mmwr/pdf/wk/mm5349.pdf)). The January 2005 data suggest that vaccination continued to occur during the month of December and was concentrated among persons in priority groups. Although coverage among most priority groups was somewhat lower than in non-shortage years, vaccination coverage of children 6-23 months of age was 57%, a large increase compared with the previous estimate of 7.7% from the 2002 National Immunization Survey ([www.cdc.gov/mmwr/pdf/wk/mm5337.pdf](http://www.cdc.gov/mmwr/pdf/wk/mm5337.pdf)). Children 6-23 months of age were first recommended for annual influenza vaccination beginning in 2004.

The BRFSS is a monthly state-based survey. An average of 5,000 households per week and 20,000 households per month are interviewed nationwide. Information is obtained for one sampled adult and one sampled child (if a child or children live in the household). In past years, reports of influenza vaccination among adults have been based on the question: "During the past 12 months, have you had a flu shot?" Limited information was collected on conditions that place adults at high risk of complications from influenza infection, and no information was collected on specific date of vaccine receipt or on influenza vaccination coverage among children.

As of November 1, 2004, new questions were temporarily added to obtain information on vaccine use in all persons aged  $\geq 6$  months, including month and year of vaccination, whether or not the respondent is in one or more of the groups prioritized to receive vaccine this season (persons aged  $\geq 65$  years or 6-23 months; high-risk persons aged 2-64 years; health care workers with patient contact; and household contacts of infants aged  $< 6$  months) and the reason for not having received vaccine. Persons were included in the high-risk group if they had any of the following conditions: diabetes, asthma or other lung disease, heart disease, weakened immune system, kidney disease, sickle cell anemia or other anemia, pregnancy (asked of adults only), or, use of chronic aspirin therapy (asked for children only).

Vaccination coverage in this report reflects vaccination received September 1 through December 31, 2004 for either inactivated or live influenza vaccine. Because of concerns about potential recall bias in self-reports of vaccination for the 2003-04 season among BRFSS respondents interviewed in January 2005, coverage from BRFSS is compared with the 2003 National Health Interview Survey (NHIS) data, the most recent NHIS data available (CDC unpublished data, [Table 3](#)). Information on vaccination coverage was only asked of adults for the 2003 NHIS and was based on the question "During the past 12 months, have you had a flu shot?" The 2003 data included interviews conducted during the entire calendar year. Thus, the NHIS vaccine coverage estimate from 2003 data reflects vaccination during the 2002-03 and 2003-04 influenza seasons and covers a different time period than the BRFSS.

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### Main findings

- **Most of the available 2004-05 influenza vaccine administered through the end of December 2004 was used to vaccinate persons in priority groups.**
- **Vaccination coverage among children in priority groups combined was 50.7%. For children aged 6-23 months, coverage was 57.3%; for children aged 2-17 years with high-risk medical conditions, coverage was 43.8% (Table 1).** The vaccination coverage among children aged 6-23 months for 1 or more doses of influenza vaccine from the 2002 National Immunization survey was 7.7%, therefore, results from the BRFSS interviews indicate a substantial increase in coverage for this age group, particularly because 2004 was the first year that all children 6-23 months of age were recommended for vaccination. No national comparison data is available from previous years for high-risk children 2-17 years of age.
- **Vaccination coverage among non-institutionalized adults in priority groups was 43.1% compared with 8.3% among adults not in a priority group (Table 2).** Persons with rarer conditions for which influenza vaccination is also recommended were not identified in the survey so they would be misclassified in the non-priority group.
- **Nearly 59% of persons aged 65 years and older reported influenza vaccination during September through December 31, 2004.** This is in comparison to 65.5% of persons in this age group who reported influenza vaccination in the 2003 NHIS survey (Table 3).
- **Twenty-eight percent of high-risk persons 18-64 years of age and 42.6% of healthcare workers reported vaccination with the 2004-05 vaccine (Table 2).** This compares to vaccination rates of 34.2% and 40.1% for high-risk 18-64 year olds and healthcare workers, respectively, based on the 2003 NHIS. The BRFSS estimate for this season's vaccination coverage among health care workers with direct patient contact is similar to the estimate from the 2003 NHIS, although these figures are not exactly comparable as the NHIS did not separate out those with and without direct patient care responsibilities.
- **Influenza vaccination uptake continued through the month of December. (See Figure.)** Among priority adults, 2.6% were vaccinated in September, 15.3% in October, 16.6% in November and 8.6% in December for an overall vaccination coverage of 43.1% for all months combined. A similar trend was seen for all priority groups including children.
- **State and local health officials should continue efforts to reach people who are in vaccination priority groups, particularly as they receive influenza vaccine.** Although influenza activity has been increasing in the United States, it is likely that the flu season has not yet peaked and many persons may still benefit from late vaccination.

Because some states and local communities have excess vaccine and demand by priority groups has waned, beginning in January, 2005 healthy persons 50-64 years old and household contacts of any person at increased risk for influenza-related complications were added to the list of priority persons for inactivated influenza vaccine (see [www.cdc.gov/flu/protect/lateseasonguidance.htm](http://www.cdc.gov/flu/protect/lateseasonguidance.htm)). Based on local supplies and demand among priority groups, the categories of persons eligible for inactivated influenza vaccine may be expanded even further. However, persons at greatest risk of influenza-related complications should continue to be encouraged to receive influenza vaccination if they have not yet done so. Persons interested in receiving vaccination should check with their doctor or local health department to find out where vaccine is available in their area.

These results reflect the situation at the time of the survey and data release (i.e., coverage up through the end of December, 2004) and are mid-season estimates. The additional influenza vaccination questions will be included in the BRFSS survey through February 28, 2005, and additional updates will be provided.

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**Table 1. Percentage of children aged 6 months – 17 years reported receiving influenza vaccination,\* by vaccination priority status – United States,<sup>†</sup> Behavioral Risk Factor Surveillance System, 2004-05 influenza season**

Vaccination priority status	Partial-season vaccination September – December 2004	
	No. interviewed	% (95% CI <sup>§</sup> )
Children aged 6 – 23 months	403	57.3 (± 9.0)
Children aged 2 – 17 years with high-risk conditions <sup>¶</sup>	478	43.8 (±10.0)
Nonpriority group children and others aged 2 – 17 years <sup>**</sup>	3,543	12.4 (± 2.6)

\*Interviews with household members were conducted during January 2-22, 2005. Data reflect mid-season estimates for the 2004-05 influenza season.  
<sup>†</sup>Does not include data for the following states: AL, MI, MT, NJ, OR and WA.  
<sup>§</sup>Confidence interval  
<sup>¶</sup>Asthma, other lung problems, heart problems, diabetes, kidney problems, weakened immune system, anemia or chronic aspirin therapy.  
<sup>\*\*</sup>Includes children aged 2-17 years who might be in additional priority groups such as those with rare conditions not

**Table 2. Percentage of adults reporting influenza vaccination,\* by vaccination priority status<sup>†</sup> --- United States,<sup>§</sup> Behavioral Risk Factor Surveillance System, 2004-05 influenza season**

Vaccination priority status	Partial-season vaccination September – December 2004	
	No. interviewed	% (95% CI <sup>¶</sup> )
Persons aged 18-64 years with high-risk conditions <sup>**</sup>	2,669	28.0 (± 3.5)
Persons aged ≥65 years	4,747	58.9 (± 2.9)
Health-care workers with patient contact <sup>††</sup>	1,204	42.6 (± 5.6)
<b>Total persons in priority groups<sup>§§,¶¶</sup></b>	<b>8,454</b>	<b>43.1 (± 2.1)</b>
Nonpriority group persons aged 18–64 years	10,637	8.3 (± 1.6)

\*Interviews were conducted during January 2-22, 2005. Data reflect mid-season estimates for the 2004-05 influenza season.  
<sup>†</sup>Does not include persons in the following additional vaccination priority groups: residents of nursing homes and long-term care facilities and out-of-home caregivers for a child aged <6 months.  
<sup>§</sup>Does not include data for the following states: AL, MI, MT, NJ, OR and WA.  
<sup>¶</sup>Confidence interval  
<sup>\*\*</sup>Asthma, other lung problems, heart problems, diabetes, kidney problems, weakened immune system, anemia or pregnancy.  
<sup>††</sup>Self-reported description might include doctors, nurses, laboratory workers, and office receptionists.  
<sup>§§</sup>Persons can be included in more than one priority group.  
<sup>¶¶</sup>Includes persons with a child aged <6 months in the household; stable estimates for this group could not be

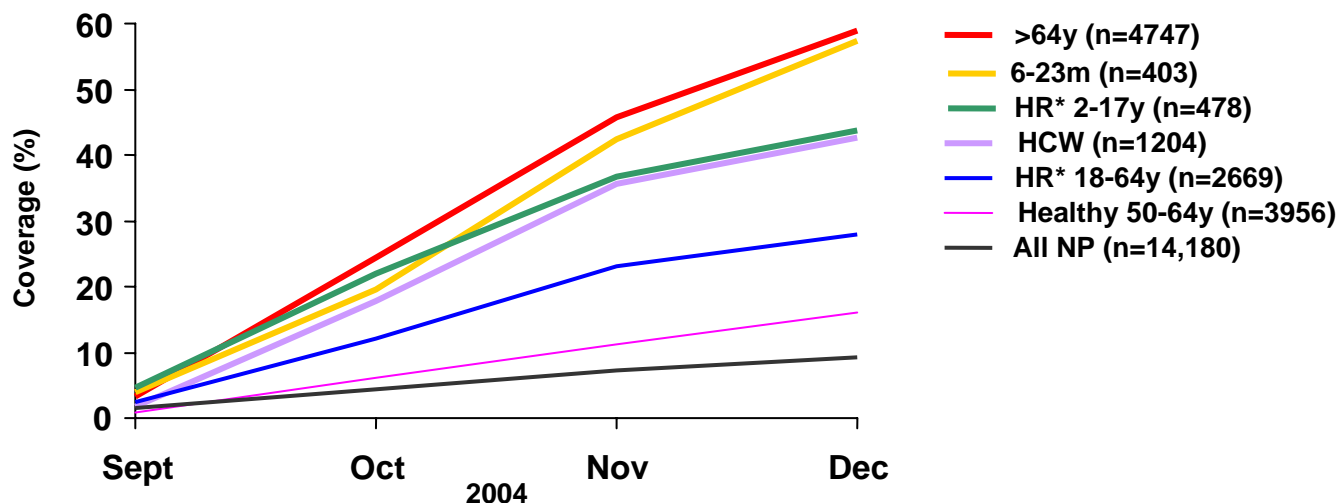
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**Table 3. Influenza vaccine coverage among adults  $\geq 18$  years of age based on the 2003 National Health Interview Survey, by age and risk group.**

<b>Age group and risk group</b>	<b>Sample size</b>	<b>Weighted sample size</b>	<b>Vaccination Coverage (95%CI)</b>
50-64 years	6,666	46,000,502	36.8 (35.4, 38.2)
65+ years	5,662	33,677,903	65.5 (64.1, 66.9)
Persons with high-risk condition			
18-64 years	4,347	29,746,447	34.2 (32.5, 35.9)
18-49 years	2,341	16,324,659	24.2 (22.1, 26.4)
50-64 years	2,006	13,421,788	46.3 (43.7, 49.0)
Persons without high-risk condition			
18-49 years	15,654	113,504,609	15.8 (15.1, 16.5)
50-64 years	4,637	32,425,141	32.7 (31.2, 34.3)
Pregnant women	315	2,339,627	12.8 (9.0, 17.9)
HCW	2,146	14,604,018	40.1 (37.5, 42.7)
Household contacts of persons at high risk including children < 2 years			
Total	2,990	24,517,423	18.9 (17.3, 20.5)
18-49 years	2,501	20,404,008	14.9 (13.4, 16.6)
50-64 years	489	4,113,415	38.4 (33.6, 43.5)

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**Figure. Cumulative monthly influenza vaccination coverage from September-December, 2004, Behavioral Risk Factor Surveillance System, (Interviews conducted Jan. 2-22, 2005, n=23,515)**



HR= High-risk conditions including asthma; other lung, heart, or kidney problems; diabetes, weakened immune system, anemia, pregnancy (adults only) or aspirin therapy (children only).

HCW= Health care worker.

NP=Non-priority group.

\*Does not include persons in households with children aged <6m, or out-of-home care givers of children aged <6m, or others with rare high-risk conditions.

For more information, visit [www.cdc.gov/flu](http://www.cdc.gov/flu) or call the CDC Flu Information Line at 800-CDC-INFO (English and Spanish) or 888-232-6358 (TTY).

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